What is claimed is:

1. An apparatus for selectively reading data recorded on an information recording medium comprised by laminated recording layers, comprising:

a light source for injecting a light on an input edge of a recording element, of a multi-layered planar waveguide type, assembled into said recording medium containing laminated recording layers, each recording layer having data represented by scattering centers;

a converging lens for freely adjustably focusing said light emitted from said light source to generate an input light;

an input light directing device for directing said light source and said converging lens as a unit so as to focus said input light to a desired location;

an image recording device having an imaging element for recording an informational image generated by diffraction effects of guided waves produced within said multi-layered planar waveguide type recording element;

an optical power detector for detecting output light emitted from an output edge of a recording layer as well as scattered light generated from layers other than recording layers; and

an optical power discrimination circuit, operatively connected to said input light directing device, for determining whether an optical power detected by said optical power detector is associated with said output light or said scattered light.

2. An apparatus for reading data in an information recording medium containing a plurality of lamination recording sections arranged longitudinally and separated by a plurality of longitudinally extending head seek grooves, said apparatus comprising:

an illumination head device having a light output section shaped to freely couple or decouple from a head alignment groove formed at a light input section of each of said lamination recording sections, and to freely slide in a thickness direction of said information recording medium when being coupled with said head alignment groove for aligning with a recording layer; and

an image data recording device having an imaging element for recording a floating image formed in a space above said information recording medium generated by output light emitted from said illumination head device interacting with a lamination recording section.

3. An apparatus according to claim 2, wherein said light output section of said illumination head is v-shape in a plan view of said information recording medium.

4. An apparatus according to claim 2, wherein said imaging element is integrally joined to an elevator actuator for focusing in a direction at right angles to said information recording medium through an elevator support.

5. An apparatus according to claim 4, wherein said illumination head and said imaging element are provided with respective elevator actuators operatively connected so as to freely receive control signals: from a photo-detector element disposed in opposition to an optical element connected through said illumination head and an optical path, and disposed in said optical path in such way to monitor optical power of reflected return light returning from said lamination recording section; and from an optical means for judging optical power levels according to a pre-determined threshold value and obtaining a total count of traverses made by power levels across said threshold value.

6. An apparatus according to claim 4, said illumination head and said imaging element are provided with respective elevator actuators operatively connected so as to freely receive control signals: from a photo-detector disposed in lateral proximity to said imaging element for detecting optical power of a floating informational image generated by said information recording medium; and from an optical means for judging optical power levels according to a pre-determined threshold value and obtaining a total count of traverses made by power levels across said threshold value.

7. An apparatus for reading data recorded on lamination recording sections, having multi-layered recording layers within each lamination recording section, embedded in a ring shape and held integrally in a data storage disc, comprising:

optical system means for focusing an input laser light on a light injection window of a target recording layer in said data storage disc;

reflected return light detecting means for detecting a returning portion of said input laser light reflected from a lamination recording section;

separator/comparator means for separating and comparing frequency components contained in photo-electric converted signals produced by said reflected return light detecting means;

counting means for counting a number of traverses made by said photo-electric converted signals across a pre-determined threshold value; and

aligning means operatively connected to said separator/comparator means for aligning said input laser light with said light injection window by moving in an axial direction.

8. An apparatus according to claim 7, wherein said optical system means inject input laser light concurrently into a plurality of light injection windows of target recording layers.

9. An apparatus according to claim 7, wherein said input laser light is focused on an inner peripheral surface of said data storage disc.

10. An apparatus according to claim 7, wherein said input laser light is focused on an outer peripheral surface of said data storage disc.

11. An apparatus for reading information recorded on a target waveguide by injecting an input light into a lamination recording section comprised by a plurality of waveguides serving as information recording layers in an information recording medium comprising:

an extreme layer detection device for determining positions of a front waveguide and a rear waveguide in said lamination recording section;

a layer edge detection device for determining positions of a front waveguide edge and a rear waveguide edge; and

a layer position determining device for determining positions of each waveguide and a slanted surface associated with each waveguide edge, according to positions of said front waveguide and said rear waveguide obtained by said extreme layer detection device and positions of said front waveguide edge and said rear waveguide edge obtained by said layer edge detection device.

12. An apparatus according to claim 11, wherein said apparatus is provided with a focusing device for focusing said input light on a light injection window determined according to positions of a target waveguide in said lamination recording section and a slanted edge associated with said target waveguide.

13. An apparatus according to claim 12, wherein said focusing device focuses light by positioning a focusing lens.

14. An apparatus according to claim 12, wherein said focusing device focuses light by positioning a prism.

15. An apparatus according to claim 12, wherein said focusing device focuses light by positioning a focusing lens and a prism.

16. An information recording medium structured as a card medium having card framing to contain not less than one longitudinally extending lamination recording section comprised by planar waveguide type information recording layers laminated in a thickness direction of said card medium, and a row of head alignment grooves having respective light injection windows separated by a head seek groove extending longitudinally so as to permit an illumination head to freely travel in said head seek groove to couple with a desired light injection window.

17. An information recording medium according to claim 16, wherein said head alignment groove is v-shaped.

18. An information recording medium according to claim 16, wherein said card framing is provided with head positioning markers to indicate positions of said light injection windows or said head alignment grooves.

19. An information recording medium comprising a data storage disc section having recording sections comprised by a lamination of recording layers distributed in a ring arrangement and a support section for supporting said data storage disc section at its periphery.

20. An information recording medium according to claim 19, wherein said support section is provided with a rotation mechanism.

21. An information recording medium according to claim 19, wherein said data storage disc section comprises a column of light injection windows arranged in parallel to a central axis of said disc for injecting light into said recording layers, and a lamination of opposing marker layers surrounding said column of light injection windows.

22. An information recording medium according to claim 21, wherein said marker layers are arranged in a different interlayer spacing than an interlayer spacing of recording layers in a wedge-shaped recording section.

23. An information recording medium according to claim 21, wherein said data storage disc section is provided with a position information recording layer containing position information for focusing input light on a light injection window.

24. An information recording medium according to claim 21, wherein said data storage disc section is comprised by a plurality of discs.

25. An information recording medium comprised by a lamination of a plurality of waveguides serving as recording layers, and containing markers indicating a position of a light injection window corresponding at least to a front recording layer and a rear recording layer.

26. An information recording medium according to claim 25, wherein said medium is embedded with a focusing lens or a reflection mirror.

27. A method for selectively reading data recorded in a lamination recording section comprised by planar waveguide type recording layers by identifying a target recording layer by moving input light across input edges and detecting optical power of output light emitted from output edges to identify said target recording layer and obtaining an informational image to read target data contained in said target recording layer.

28. A method for selectively reading data from a target recording layer included in a lamination recording section having planar waveguide type recording layers, comprising the steps of:

focusing a light emitted from a light source to form an input light for injecting into an input edge of any of said recording layers including said target recording layer;

focusing light on a front recording layer or a rear recording layer serving as references for determining positions of recording layers;

focusing light on said target recording layer and detecting an optical power level received on optical power discriminating means;

judging whether said optical power level corresponds to output light emitted from an output edge of any one of recording layer or to scattered light produced from layers other than recording layer while moving said input light across input edges to identify said target recording layer;

focusing said light on an input edge of said target recording layer in final positioning to generate an informational image; and

recording said an informational image so as to read data contained in said target recording layer.

29. A method for selectively reading data from a target recording layer included in a lamination recording section having planar waveguide type recording layers, comprising the steps of:

focusing a light emitted from a light source to form an input light for injecting into an input edge of any of said recording layers including said target recording layer;

judging whether said optical power level corresponds to output light emitted from an output edge of any one of recording layers or to scattered light produced from layers other than said recording layers, so that, when output light is detected, recording an informational image produced by that recording layer as positioning reference for other recording layers, and, when scattered light is detected, said input light is re-focused to any neighboring recording layer and recording an informational image produced from said neighboring recording layer to obtain data from said neighboring recording layer as positioning reference for recording layers;

identifying position of said target recording layer while moving said input light across input edges and judging optical power levels; and

transferring said input light to an input edge of said target recording layer, and recording an informational image generated to read data contained in said target recording layer.

30. A method according to ~~one of claim 28 or 29~~ claim 28, wherein judging of optical power levels is performed by comparing a detected optical power with a pre-determined threshold value of optical power.

31. A method according to claim 30, wherein said input light is transferred to a target recording layer according to information based on:

a total count of traverses made by a detected optical power across said pre-determined threshold value; and

obtaining relative position information based on a level of optical power and said total count.

32. A method according to ~~one of claim 27 or 29~~ Claim 27, wherein said informational image includes servo informational image that is unique to each recording layer.

33. A method according to claim 32, wherein said input light is transferred to a target recording layer according to data provided by absolute position information image contained in said servo information.

34. A method according to claim 33, wherein said input light is transferred to a target recording layer according to data provided by absolute position information image contained in said servo information and relative position information based on said absolute position information.

35. A method for aligning an illumination head for reading information recorded in a laminated information recording medium, having a plurality of data recording layers laminated in a thickness direction of said card medium, comprised by a plurality of lamination recording sections arranged in a longitudinal direction, wherein each lamination

recording section has a head alignment groove at a transverse end for coupling with an illumination head having light injection windows for aligning said illumination head with a specific recording layer by sliding in a card thickness direction within said head alignment groove, and rows of lamination recording sections are separated by longitudinal head seek grooves; said method comprising the steps of:

detecting head positioning markers provided on a longitudinal frame of said card medium to correspond to head alignment grooves;

decoupling an illumination head from a head alignment groove and placing in a standby position, and moving said illumination head along a head seek groove to oppose a selected head positioning marker for preliminary head positioning;

positioning said illumination head to a top or bottom window position within said head alignment groove, and coupling to said head alignment groove in a vertical position;

performing rough positioning of said illumination head so that input light is roughly in line with a target light injection window; and

performing precision positioning of said illumination head so that input light is precisely aligned with said target light injection window.

36. A method for aligning an illumination head for reading information contained in an information recording medium comprised by a data storage disc section having lamination recording sections distributed in a ring arrangement, by performing initial alignment based

on power levels of reflected return light produced by a portion of input light from a vicinity of input light window of said target recording layer.

37. A method according to claim 36, wherein variations in power level of said reflected return light are governed by periodicity of light reflected from marker layers arranged in an axial direction of said data storage disc section that is different from a periodicity produced by said laminated recording layers.

38. A method according to claim 36, wherein said initial positioning is performed according to a continuing process based on a position determined from an initial positioning step and a periodicity of lamination of recording layers in said data storage disc section.

39. A method for reading data, recorded in laminated information recording medium having a plurality of waveguides as information recording layers, comprising the steps of:

detecting positions of a front waveguide and a rear waveguide as well as input edges associated with each waveguide;

determining positions of each waveguide as well as said input edges according to positions of said front waveguide and said rear waveguide as well as slanted edge surfaces associated with said input edges; and

focusing light on an input light position determined by a position of a target waveguide and a position of a slanted edge surface associated with said target waveguide so as to read data contained in said target waveguide included in said plurality of waveguides.

~~40.~~ A method for reading data, recorded in laminated information recording medium having a plurality of waveguides as information recording layers, comprising the steps of:

providing positioning markers to correspond with positions of light injection windows associated with a front waveguide and a rear waveguide;

detecting light input positions for inputting light into said front waveguide and said rear waveguide with reference to respective markers;

obtaining light input positions to each waveguide in said plurality of waveguides according to detected light input positions of said uppermost waveguide and said lowermost waveguide; and

focusing light on an input light position determined by a position of a target waveguide so as to read data contained in said target waveguide included in said plurality of waveguides.

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